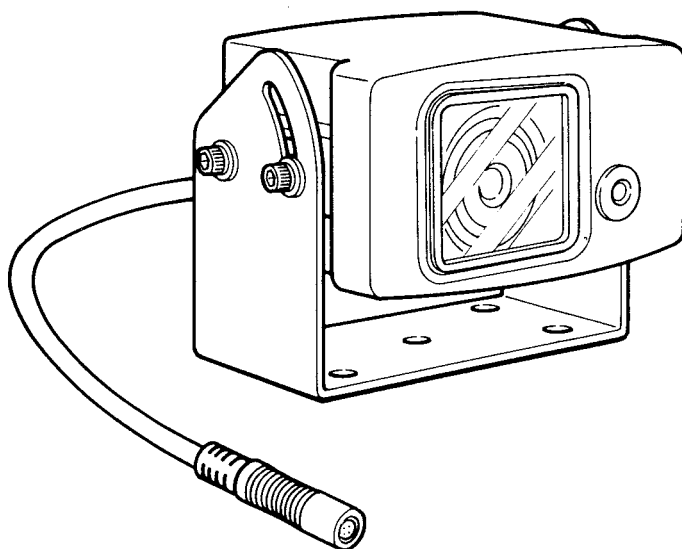


SONY®

BLACK AND WHITE VIDEO CAMERA

SSC-530AM **SSC-534AM**

SERVICE MANUAL



AUTOMOTIVE
WatchCam

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Features

The SSC-530AM/534AM is a black and white video camera designed for fitting to a bus or truck, to provide the driver with a view of the rear of the vehicle. It should be used together with a black and white monitor such as the Sony SSM-721AMR/724AMR.

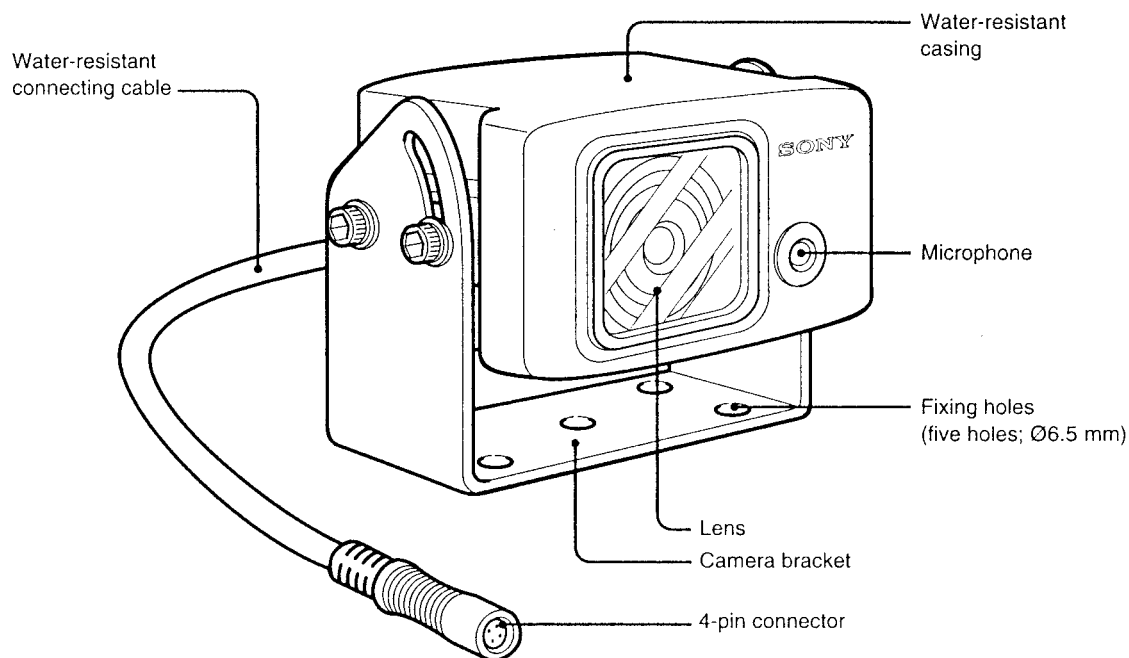
It has the following main features:

- Compact and lightweight
- Uses a CCD (Charge Coupled Device) image sensor, giving a high resolution picture.
- Wide field of view — 100 degrees horizontally, 80 degrees vertically
- Protected by a water-resistant casing, so it can be used even where exposed to rain, snow and spray.
- Uses a 4-pin connector, so only one cable is needed to connect to a monitor.
- Operates in a wide temperature range (–20°C to +70°C; –4°F to +158°F).
- Built-in electret condenser microphone allows aural check.

SECTION 1

OPERATION

Part Designations



Precautions

Power supply

The camera operates with a 12 V DC power supply; always use in conjunction with one of the specified monitors.

Installation and storage location

Avoid the following locations:

- In excessive heat or cold
- In excessively dusty locations
- In locations subject to severe vibrations

Handling

Do not drop or subject the camera to severe vibrations.

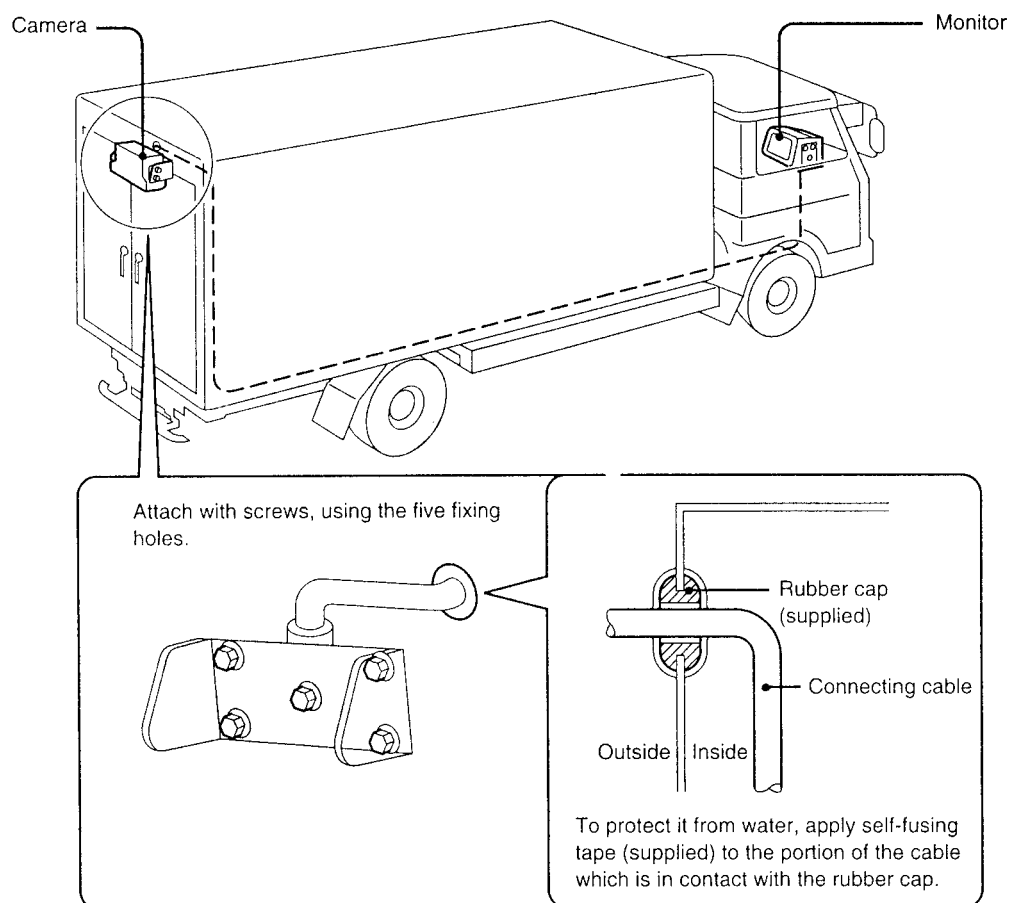
Cleaning

- Clean the unit and camera bracket with a dry soft cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent, such as alcohol or benzene, which might damage the finish.
- Do not apply detergent to or splash excessive amounts of water on the microphone on the front panel, as this may cause it to malfunction.

Safety

Do not disassemble the water-resistant casing. There is a risk of electric shock if you touch the internal parts.

Installation Example

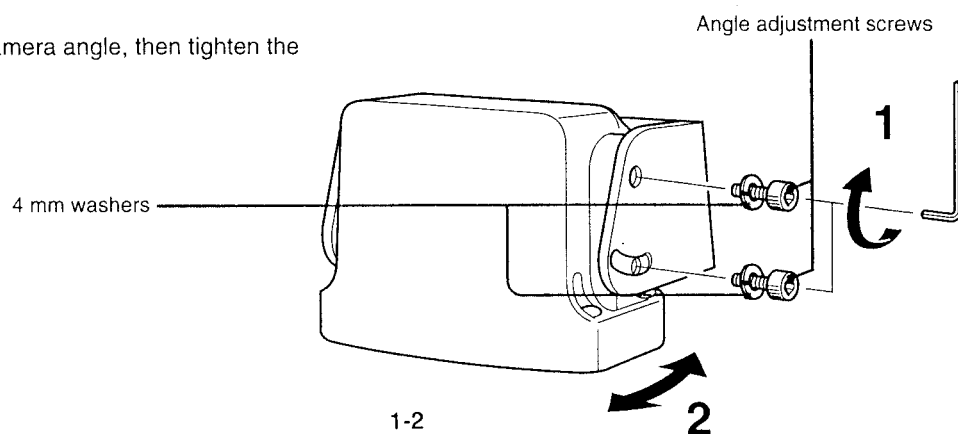


Attaching the camera bracket to the camera

- 1 Using the four angle adjustment screws*, the 4 mm washers*, and the 3 mm Allen key*, attach the camera bracket* to the camera loosely enough for adjustment.

*: supplied

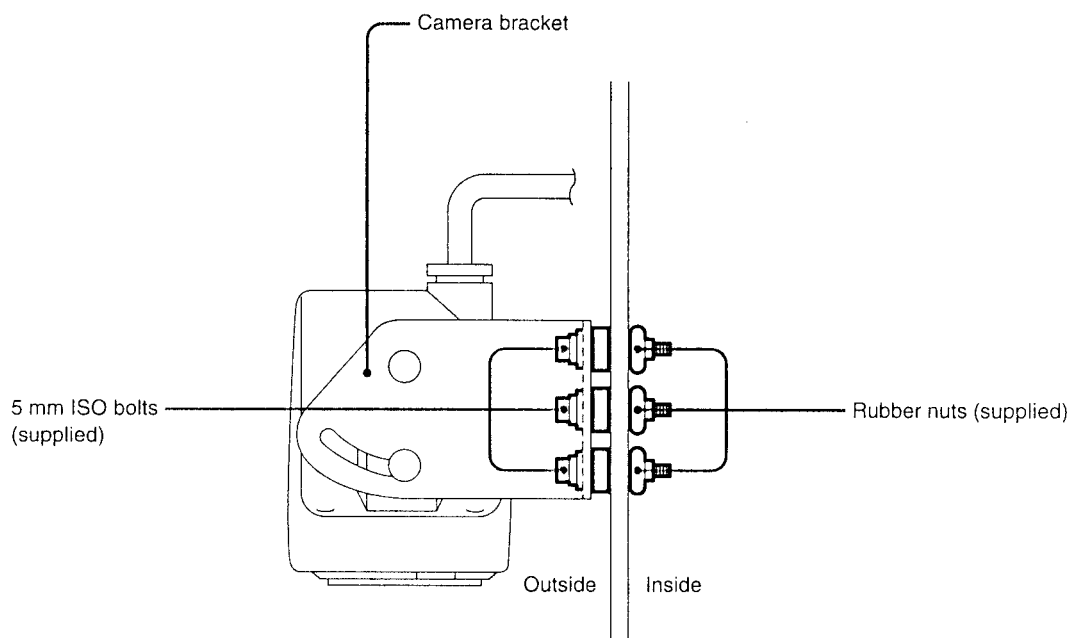
- 2 Adjust the camera angle, then tighten the screws.



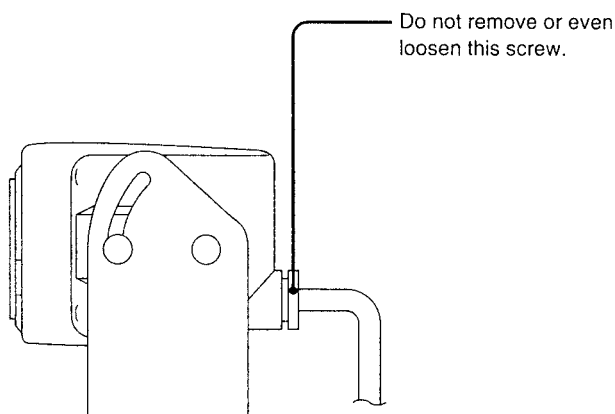
Mounting using rubber nuts

If the camera bracket is fastened directly to the vehicle body, noise may appear in the picture on the monitor. In this case the camera bracket should be mounted so that it is not in direct contact with the vehicle body, using the supplied rubber nuts.

- 1** Enlarge the five holes in the vehicle body to between 10.2 mm and 10.5 mm in diameter.
- 2** Insert the supplied rubber nuts into these holes.
- 3** Using 5 mm hexagon head bolts (ISO, 20 mm long) and 5 mm washers, fasten to a torque of 5 to 6 kg per cm.

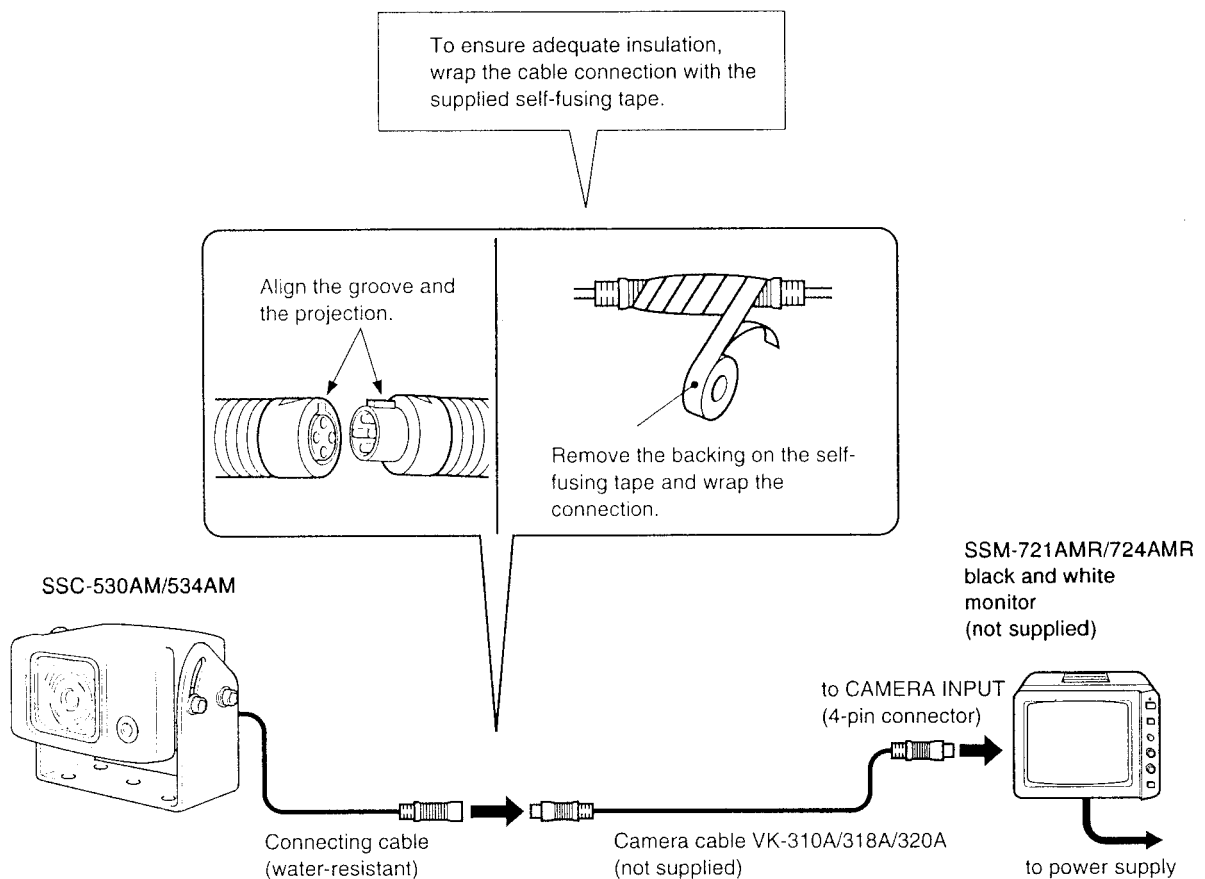


Important



Connecting to a Monitor

Example: Connecting to the 7-inch black and white monitor



The camera is supplied with power through the connecting cable, so the camera power is automatically turned on when the power to the monitor is turned on.

Notes

- To prevent the possibility of an accident caused by a short circuit, disconnect the ground terminal of the vehicle battery before installation.
- Ensure that the cable is connected firmly. Otherwise there may be problems, such as a poor picture, or total failure of operation.
- Ensure that the cable is properly protected if it has to pass through the engine compartment.
- When washing the vehicle with a pressure hose, be sure to keep the nozzle at a distance of at least 1 meter from the camera.

Specifications (SSC-530AM)

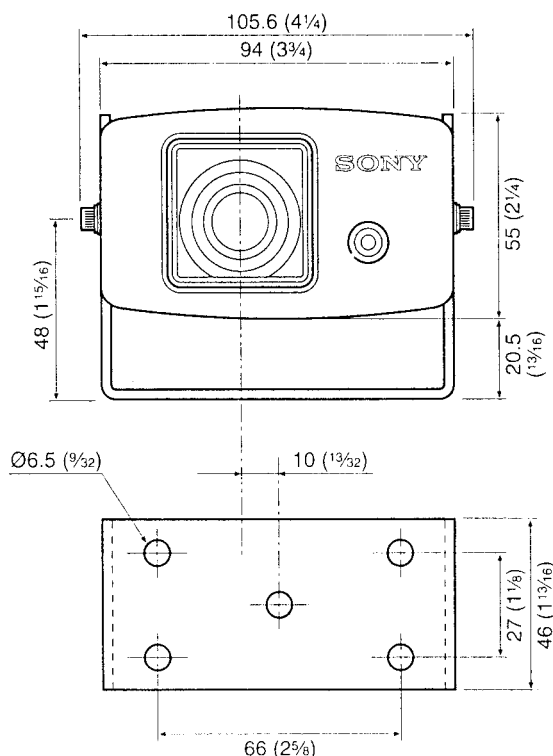
Pickup device

Pickup device	Interline transfer type CCD
Total picture elements	510 (H) × 492 (V)
Image size	1/2 inch

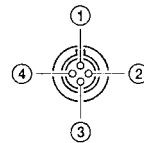
Optical and other characteristics

Lens	Focal length 3 mm Maximum aperture f/1.6
Scanning system	525 lines, 2:1 interlace
Sync system	Internal
Scan frequencies	Horizontal 15.734 kHz Vertical 59.94 Hz
Horizontal resolution	380 TV lines
Minimum illumination	0.3 lux
Signal-to-noise ratio	Minimum 50 dB (AGC off)
Power requirements	12 V DC
Power consumption	1.2 W (at 12 V DC)
Operating temperature	−20°C to +70°C (−4°F to +158°F)
Storage temperature	−30°C to +85°C (−22°F to +185°F)
Weight	550 g (1 lb 2 oz)

Dimensions
Unit: mm (inches)



Input/output connectors 4-pin multi-connector



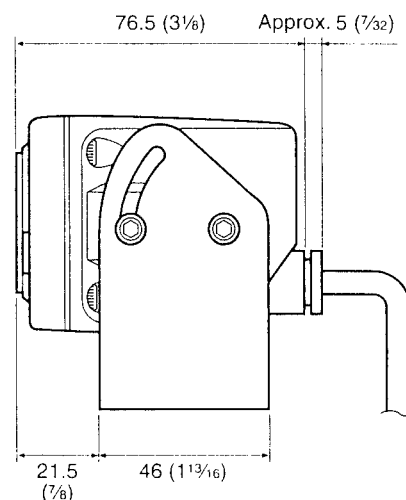
- ① DC power input
- ② Video output
Image: 0.7 Vp-p (75 ohms)
Synchronization: 0.3 Vp-p (sync negative)
- ③ Ground
- ④ Audio output
−5 dBs (0 dBs = 0.775 V)
Output impedance:
10 kilohms maximum

Accessories supplied

Camera bracket (1)
Rubber cap (1)
Adhesive (1)
Self-fusing tape (2)
3 mm Allen key (1)
4 mm washers (4)
Angle adjustment screws (4)
5 mm hexagon head bolts (5)
5 mm washers (5)
Rubber nuts (5)
Operating Instructions (1)

Accessories not supplied

VK-310A Water-resistant camera cable (10 m)
VK-318A Water-resistant camera cable (18 m)
VK-320A Water-resistant camera cable (20 m)
SSM-721AMR 7-inch black and white monitor



Design and specifications are subject to change without notice.

Specifications (SSC-534AM)

Pickup device

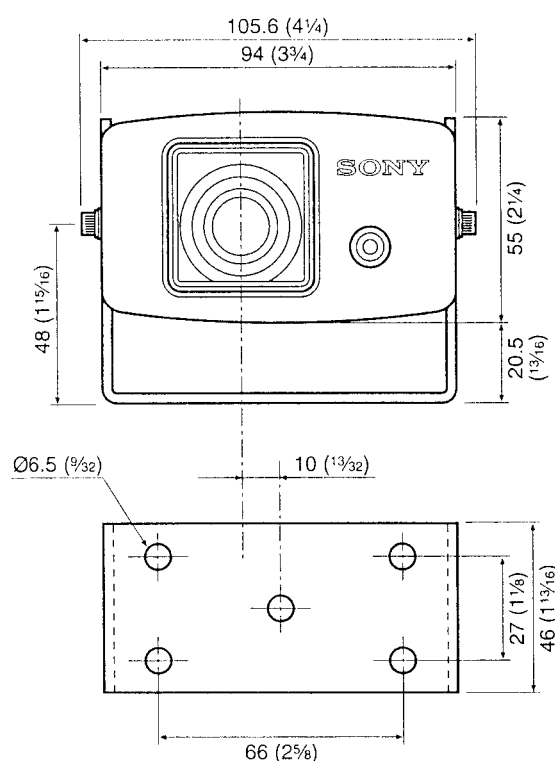
Pickup device	Interline transfer type CCD
Total picture elements	500 (H) × 582 (V)
Image size	1/2 inch

Optical and other characteristics

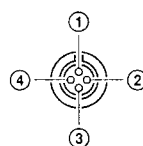
Lens	Focal length 3 mm Maximum aperture f/1.6
Scanning system	625 lines, 2:1 interlace
Sync system	Internal
Scan frequencies	Horizontal 15.625 kHz Vertical 50 Hz
Horizontal resolution	380 TV lines
Minimum illumination	0.3 lux
Signal-to-noise ratio	Minimum 50 dB (AGC off)
Power requirements	12 V DC
Power consumption	1.2 W (at 12 V DC)
Operating temperature	-20°C to +70°C (-4°F to +158°F)
Storage temperature	-30°C to +85°C (-22°F to +185°F)
Weight	550 g (1 lb 2oz)

Dimensions

Unit: mm (inches)



Input/output connectors



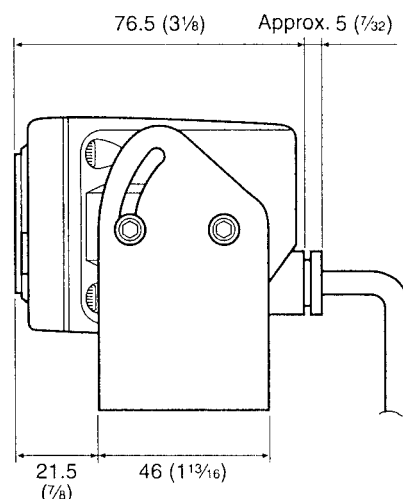
- 4-pin multi-connector
- ① DC power input
 - ② Video output
Image: 0.7 Vp-p (75 ohms)
Synchronisation: 0.3 Vp-p (sync negative)
 - ③ Ground
 - ④ Audio output
-5 dBs (0 dBs = 0.775 V)
Output impedance:
10 kilohms maximum

Accessories supplied

Camera bracket (1)
Rubber cap (1)
Adhesive (1)
Self-fusing tape (2)
3 mm Allen key (1)
4 mm washers (4)
Angle adjustment screws (4)
5 mm hexagon head bolts (5)
5 mm washers (5)
Rubber nuts (5)
Operating Instructions (1)
Mode d'emploi (French) (1)
Bedienungsanleitung (German) (1)

Accessories not supplied

VK-310A Water-resistant camera cable (10 m)
VK-318A Water-resistant camera cable (18 m)
VK-320A Water-resistant camera cable (20 m)
SSM-504AM 5-inch black and white monitor
SSM-724AMR 7-inch black and white monitor

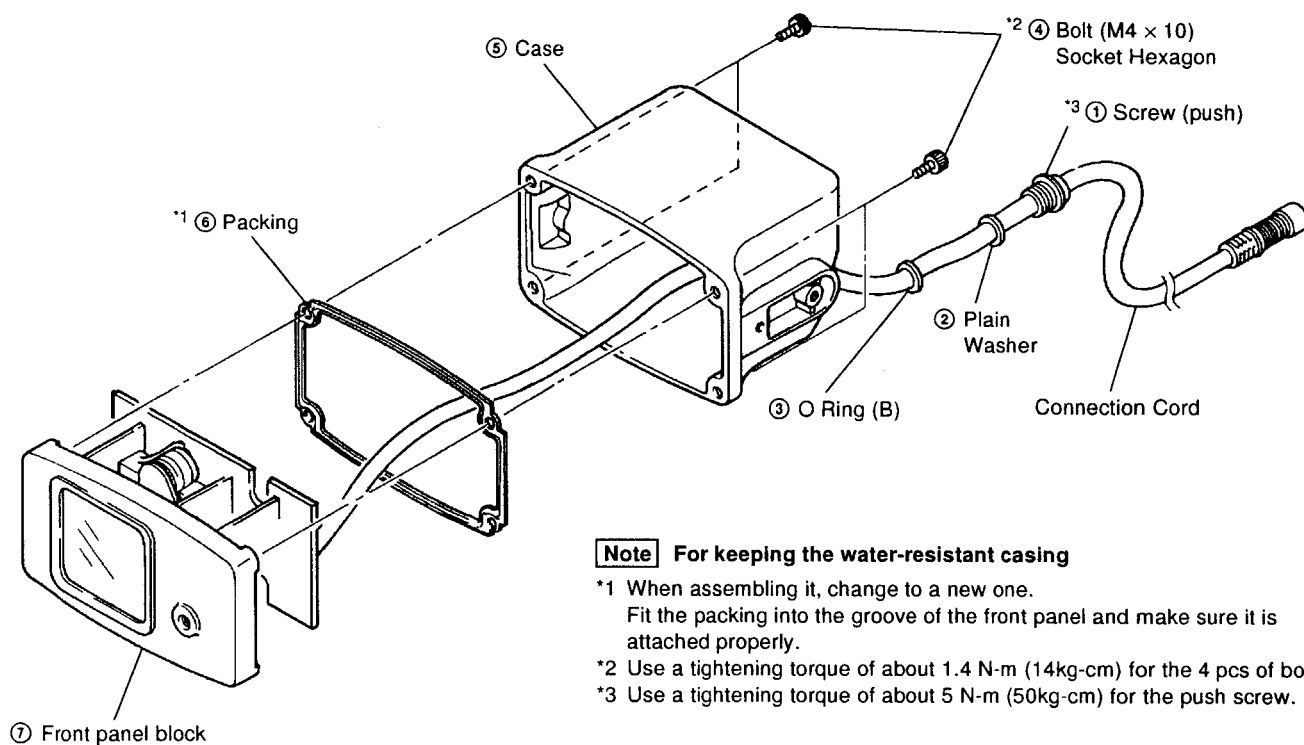


Design and specifications are subject to change without notice.

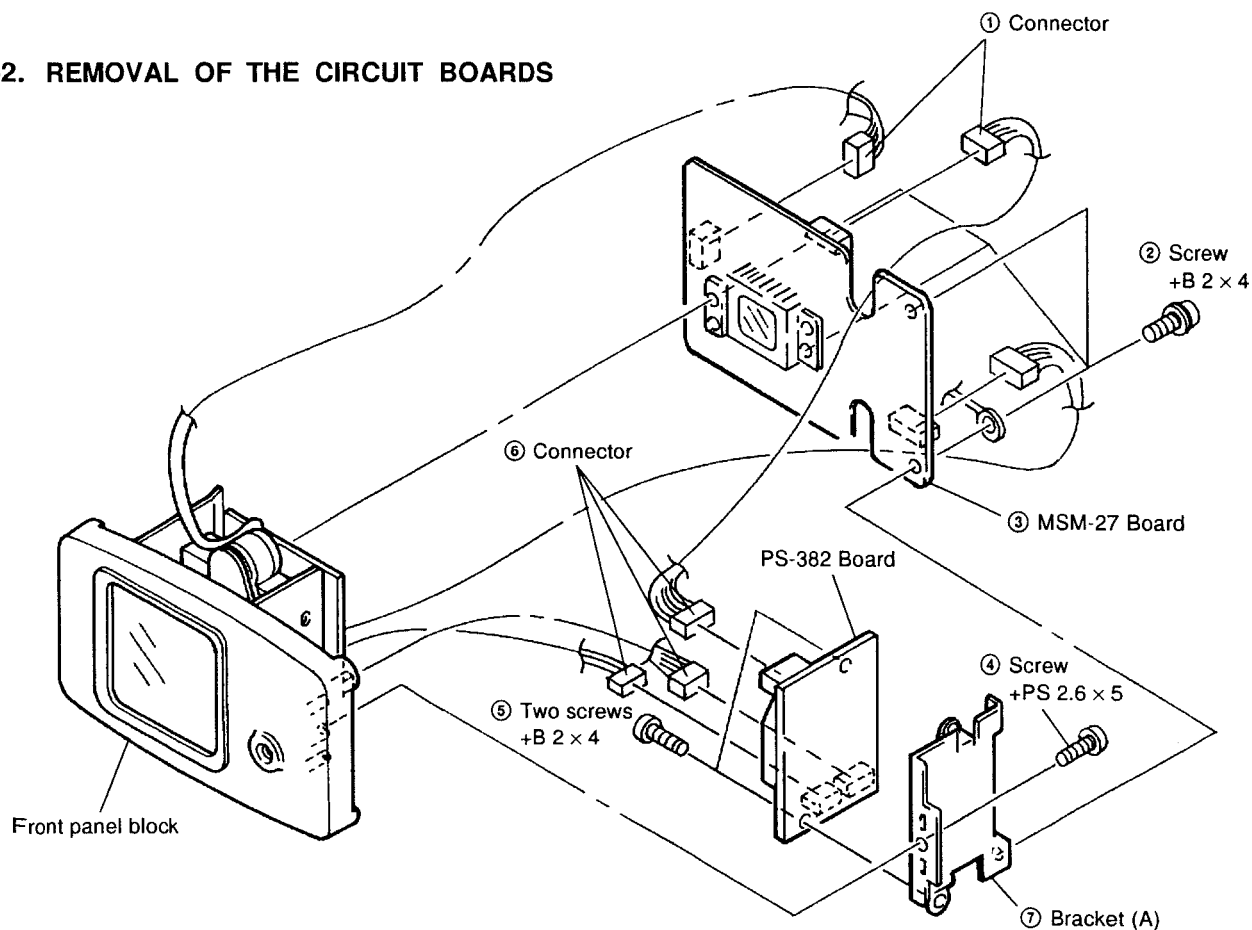
SECTION 2

SERVICE INFORMATION

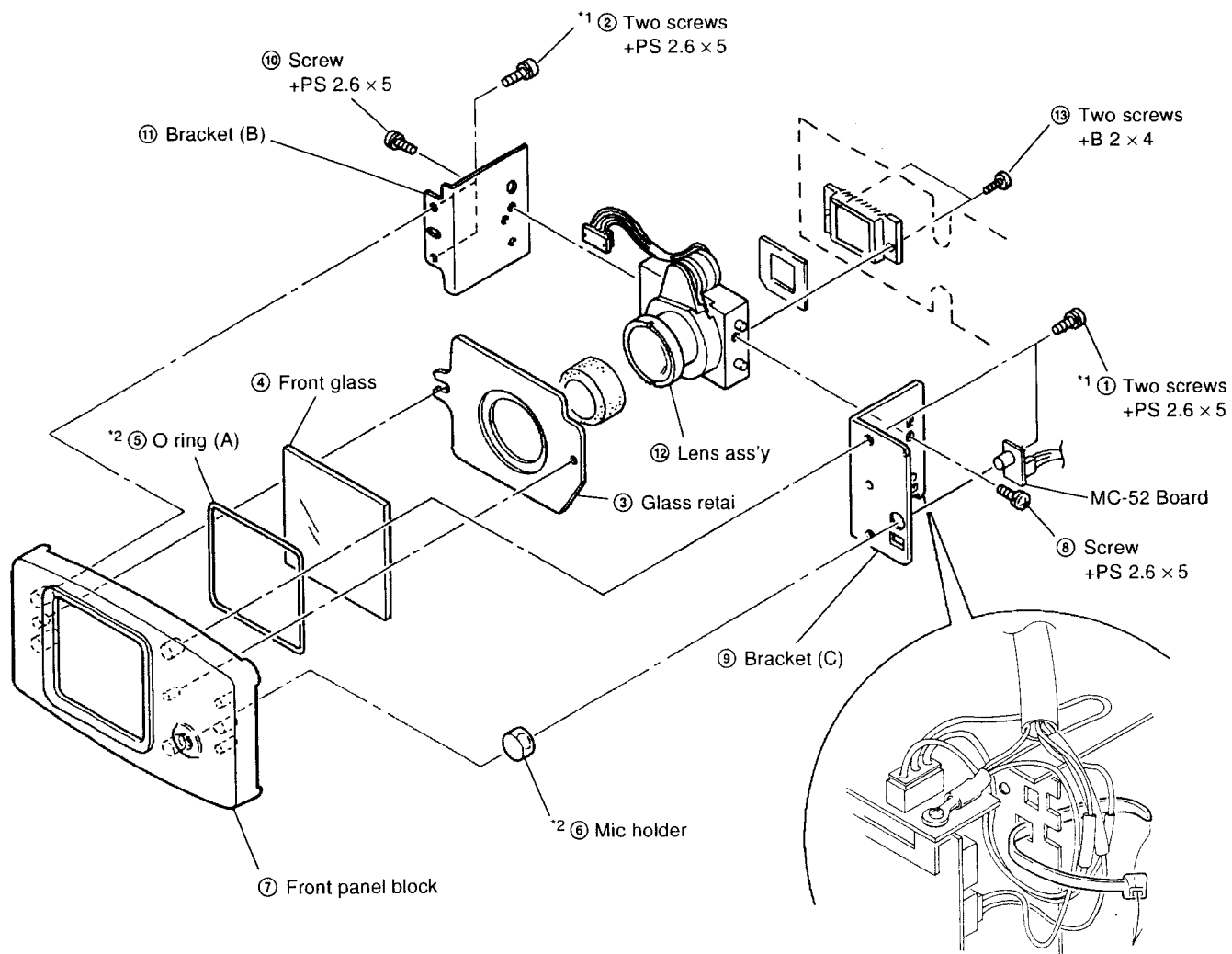
2-1. REMOVAL OF THE CASE



2-2. REMOVAL OF THE CIRCUIT BOARDS



2-3. REMOVAL OF THE LENS BLOCK



Note For keeping the water-resistant casing

*1 Use a tightening torque of about 0.5 N-m (5kg-cm) for the 4pcs of screw.

*2 When assembling it, change to a new one.

SECTION 3

THEORY OF OPERATION

3-1. MSM-27 BOARD

This board has the following blocks.

- 1) CCD imager IC101
- 2) CCD Vertical Transfer Clock Driver
- 3) Timing Signal Generator for CCD Drive
- 4) 1Chip Processor for CCD Monochrome Camera
- 5) Iris Control and Audio Amplifier

1) CCD imager IC101

CCD imager changes the light into electric signals.
The vertical transfer clock(V1,V2,V3,V4) and horizontal transfer clock(H1,H2) are feed to transfer block by IC201 and IC301.
The signal output from CCD imager goes through the Q101 buffer and is transferred to IC401.

2) CCD Vertical Transfer Clock Driver

This IC drives the following pulses; XV1, XV2, XV3, XV4, XSG1, XSG2 and the charge discard pulse XSUB to the CCD imager.
And has the VSUB voltage controller.

3) Timing Signal Generator for CCD Drive

This IC generates the clock pulses for CCD drive and making the video signal such as 'sample and hold' and other timing by the basic clock(EIA:19.0699MHz /CCIR:18.9257MHz).

H1 and H2 : H register drive pulse for CCD imager.
XV1 to XV4 : V register drive pulse for CCD imager.
XSG1 and XSG2 : Sensor gate pulse
RG : Reset gate pulse
X SUB : Electric charge throwaway pulse
XSHP and XSHD : Sample and hold for signal separation
CLP1 and CLP2 : Clamp pulse
BLK : Blanking pulse
SYNC : SYNC for composite video

4) 1Chip Processor for CCD Monochrome Camera

The signal output from the CCD imager is branched into the DATA signal and PG signal, and both undergo sample and hold in each timing(SHP,SHD1,SHD2) and signal separation.

The separated signal is input to the AGC amplifier and maintained its correct value by detecting the voltage through the external detector.

The output signal of the detector is subjected to external trap circuit, gamma correction, white clip, setup and sync signal addition, then output by the video driver.

5) Iris Control and Audio Amplifier

The iris control signal from IC401 passes through IC501 and controls the auto iris lens.

The audio signal of the microphone(MC-52 Board) is amplified by IC501.

3-2. PS-382 BOARD

This board is a power supply board and supplies +5V,+15V and -8.5V for the each board.

IC601 is dual switching regulator control IC and is PWM(Pulse Width Modulation) system.

The output of Pin 7 makes 5V with Q602(switching transistor) and L603(choke coil).

R613 and R614 adjust the output voltage of 5V line.

The output of Pin 10 makes 15V and -8.5V with Q603(switching transistor), T603(converter transformer) and D603.

R602 and R606 adjust the output voltage of 15V line.

3-3. MC-52 BOARD

The electret condenser microphone is mounted on this board.

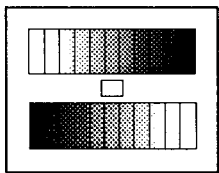
SECTION 4
ADJUSTMENTS

Note on replacing CCD image device

The CCD imager is structurally sensitive to static electricity and can be permanently damaged. For this reason, take care to handle it as well as MOS IC.
Moreover, care should be taken for dust not to be stuck on the light receiving section and for strong light not to get into it.

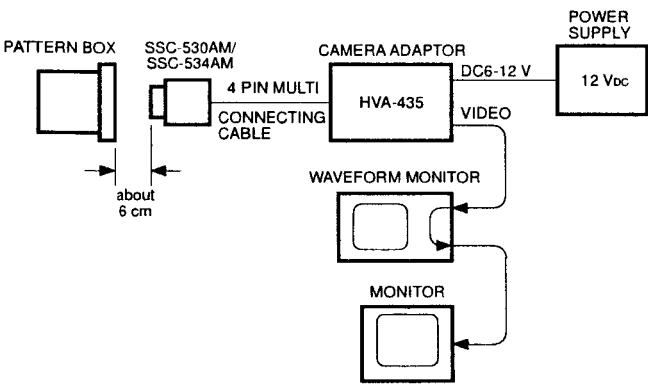
Required equipments:

- Wave form monitor
- Oscilloscope
- Monitor TV
- Gray scale pattern chart
luminance 706 nit
color temperature 3200° K



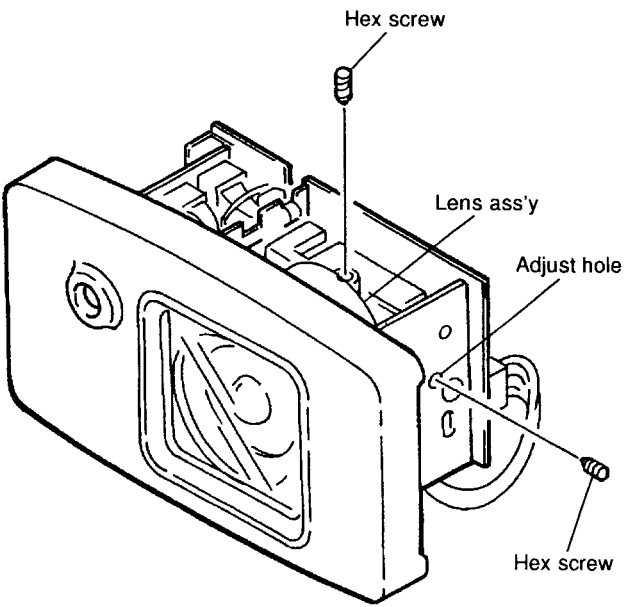
- Sony Camera Adaptor HVA-435
- ND Filter (made by KENKO)
ND25 (25%) 50 mm square
ND1 (1%) 50 mm square
Use 2 pcs of ND25 and 1pc of ND1 for 0.0625%

Connections:



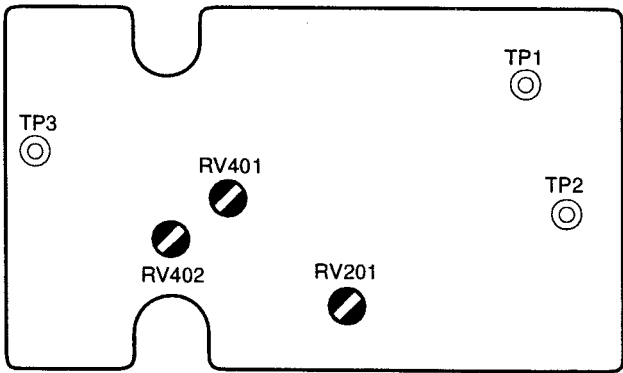
4-1. BACK FOCUS ADJUSTMENT

1. Place the camera at exactly one meter away from the subject and position the camera in a horizontal plane level.
2. To bring the subject into proper focus, loosen the 2 hex screws and adjust the lens assy by moving it back and forth.
3. After completing the adjustment, tighten the 2 hex screws.



4-2. ELECTRICAL ADJUSTMENT

[Adjustment Location]



MSM-27 BOARD - A SIDE -

SECTION 5
DIAGRAMS

4-2-1. VSUB Adjustment

- Object

Equipment

Measurement point

Adjustment point

Specification
- : Close "C"

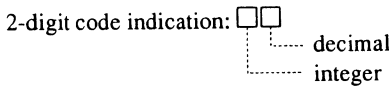
: Digital voltmeter (DC range)

: TP2 (MSM-27 Board)

: RV201 (MSM-27 Board)

: Setting value $\pm 0.1V$

<Setting value>
Refer to the code on the back side of the CCD imager.
VSUB setting value is indicated in a 2-digit code.



The code integer and the real value correspond with each other as follows.

Code integer	7	8	9	A	B	C	D
Real Value	7	8	9	10	11	12	13
Code integer	E	F	G	H	1	J	
Real Value	14	15	16	17	18	19	

(example) F5=15.5 (V)

4-2-2. AGC Level Adjustment

- Object

Equipment

Adjustment point

Specification
- : All white pattern

: Waveform monitor

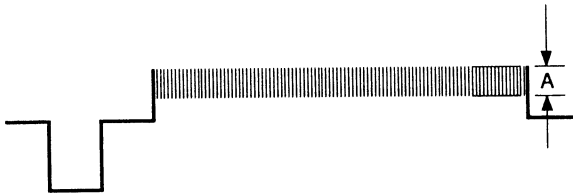
: RV402, RV401 (MSM-27 Board)

$B=70 \pm 5$ IRE (EIA)

$B=500 \pm 35$ mV (CCIR)

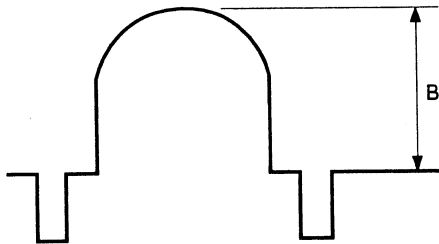
- Adjustment method :
- 1) Cover a lens with the lens cap.

2) Adjust RV402 so that A is maximum.



- 3) Remove the lens cap.

4) Adjust RV401 so that B is specifaition value.



4-2-3. Maximum Gain Adjustment

- Subject

Equipement

Adjustment point

Specification
- : Gray scale chart

: Waveform monitor (Oscilloscope)

: RV402 (MSM-27 Board)

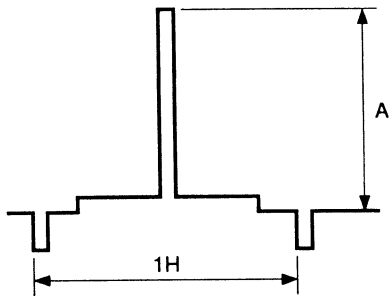
$A=105 \pm 5$ IRE (EIA)

$A=750 \pm 35$ mv (CCIR)

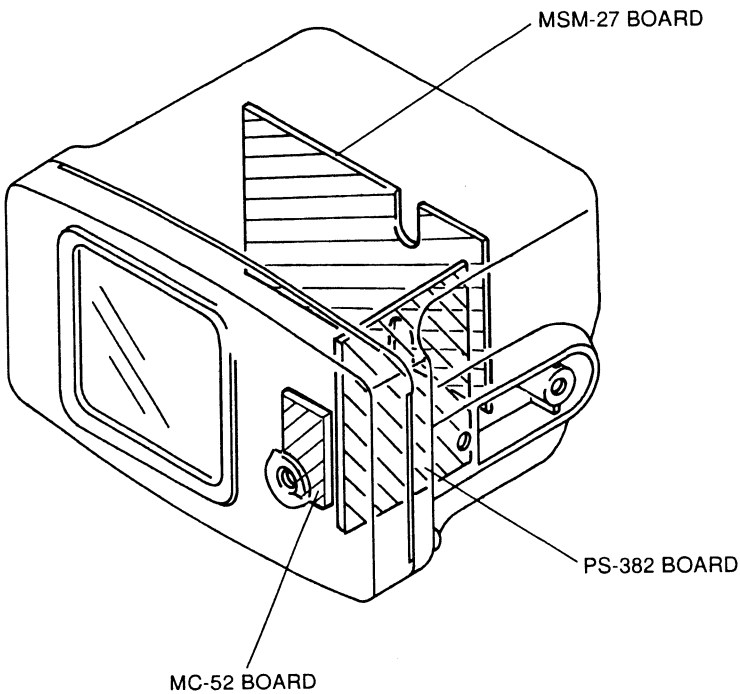
- Adjustment Procedure :
1. With a black cloth, cover the gray scale pattern chart leaving the white portion at the center of chart uncovered.

2. Attach the 0.0625% ND filter.

3. Adjust RV402 so that A is specification value.

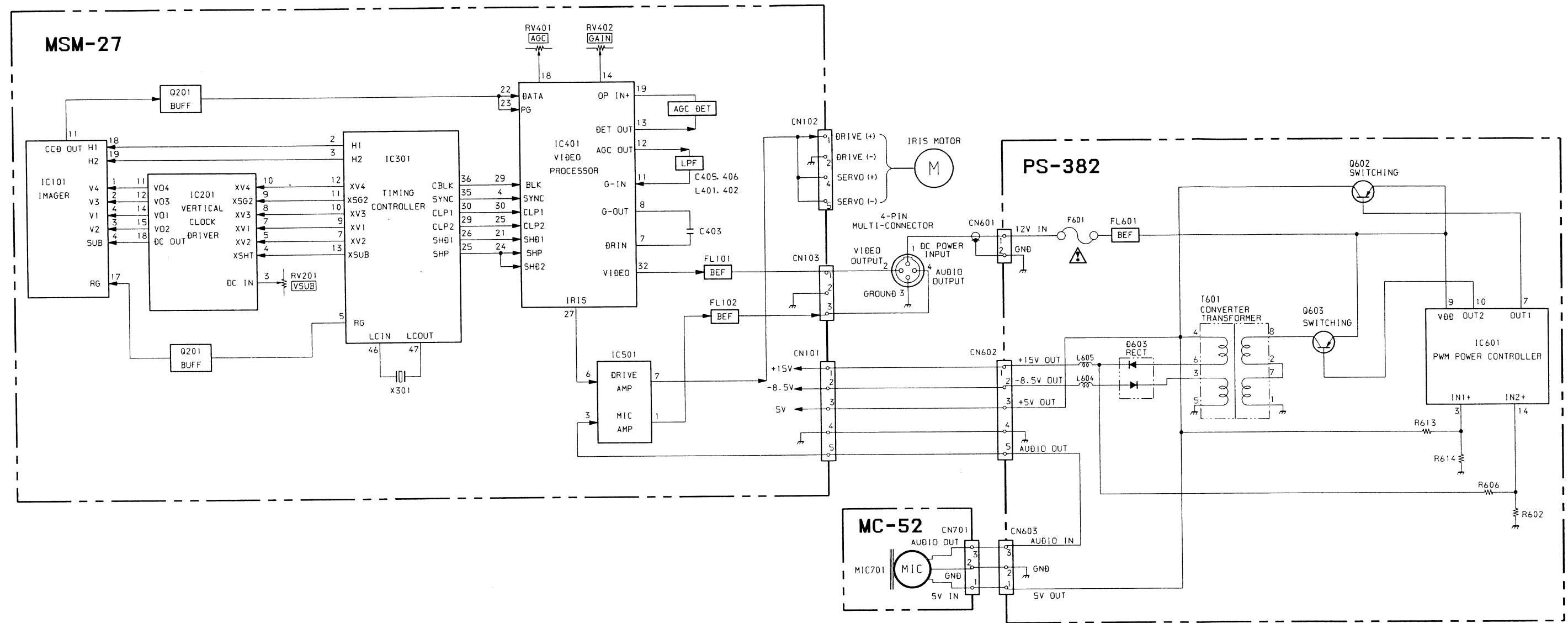


5-1. BOARD LOCATION



5-2.

5-2. BLOCK DIAGRAM

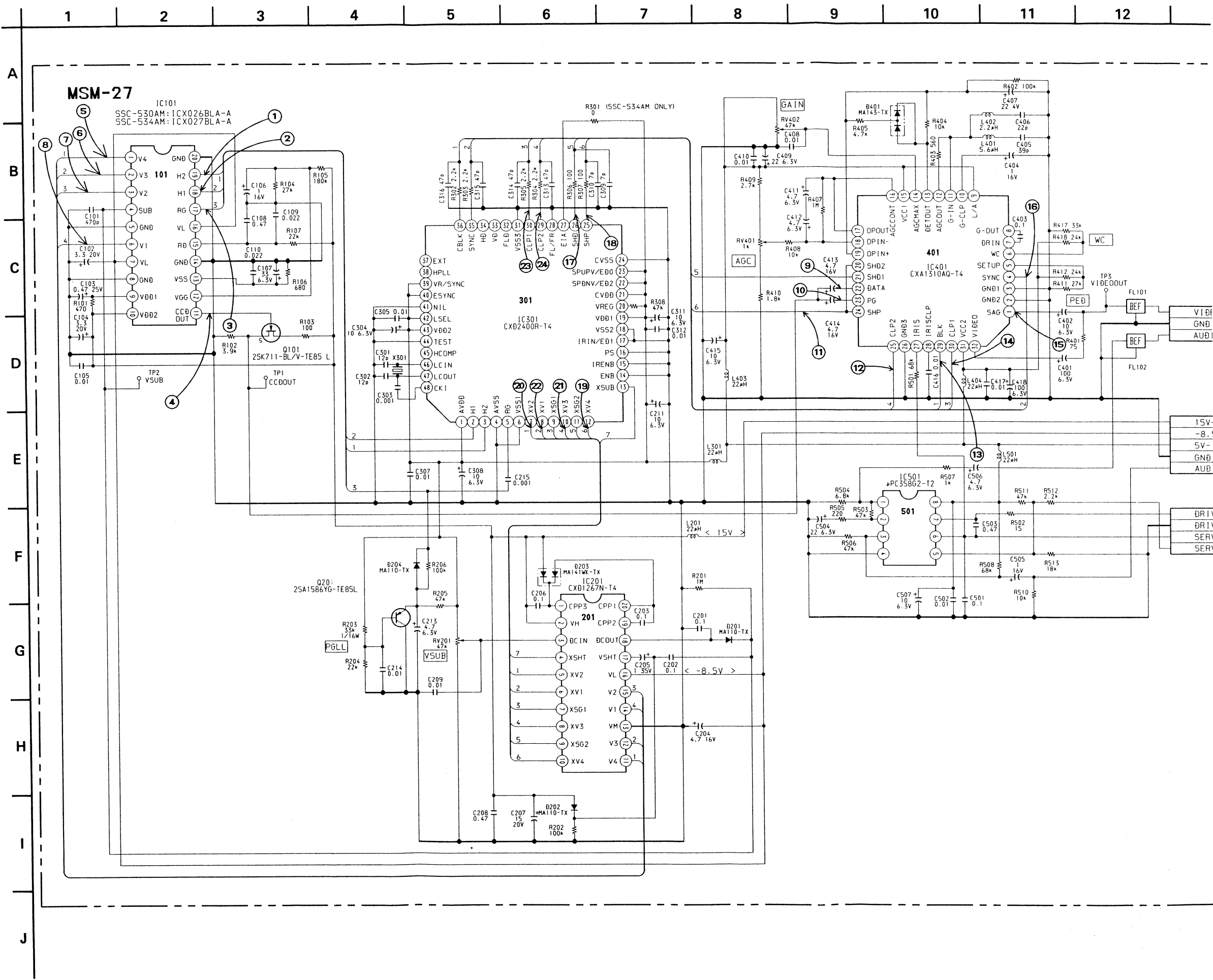
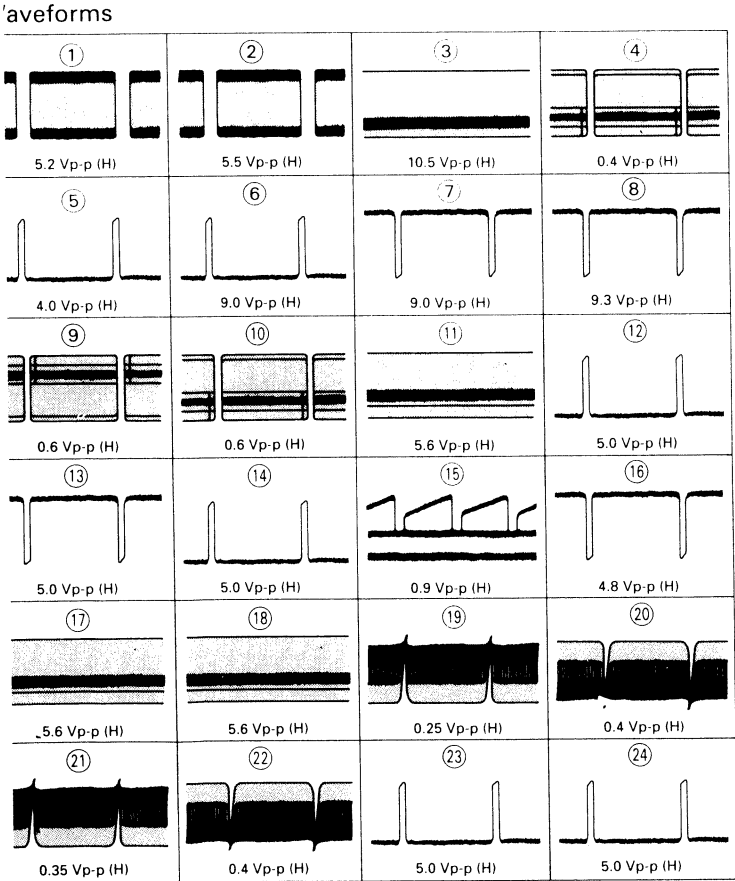
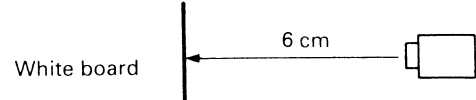


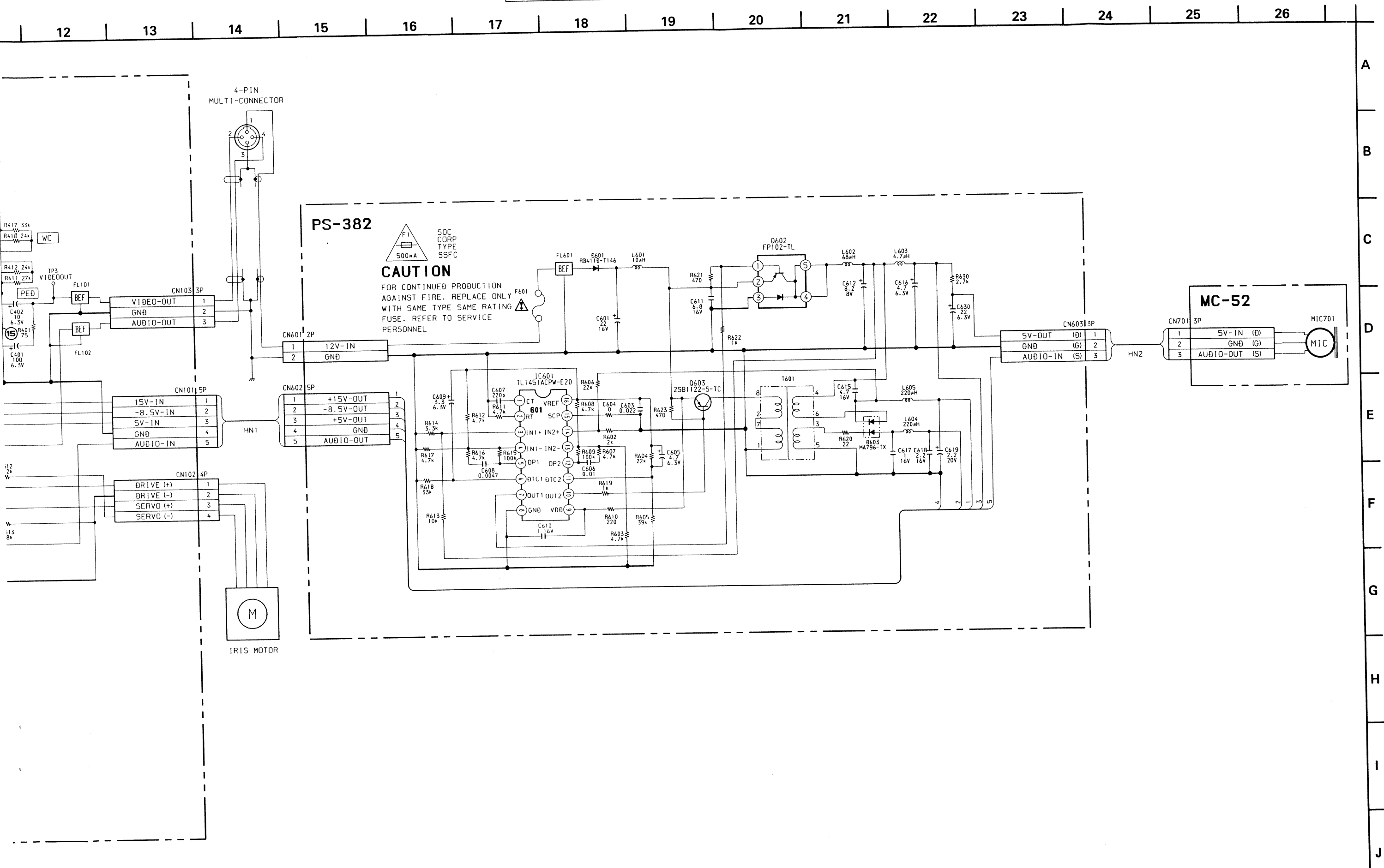
5-3. SCHEMATIC DIAGRAMS

Note: The components identified by shading and mark  are critical for safety. Replace only with part number specified.

Note:

- All capacitors are in μF unless otherwise noted. p: μF 50 WV or less are not indicated except for electrolytic and tantalums.
- All resistors are in ohms, 1/10 W unless otherwise noted.
- $\text{k}\Omega = 1000 \Omega$, $\text{M}\Omega = 1000 \text{k}\Omega$
-  : GND





SECTION 6
REPAIR PARTS

[NOTE]

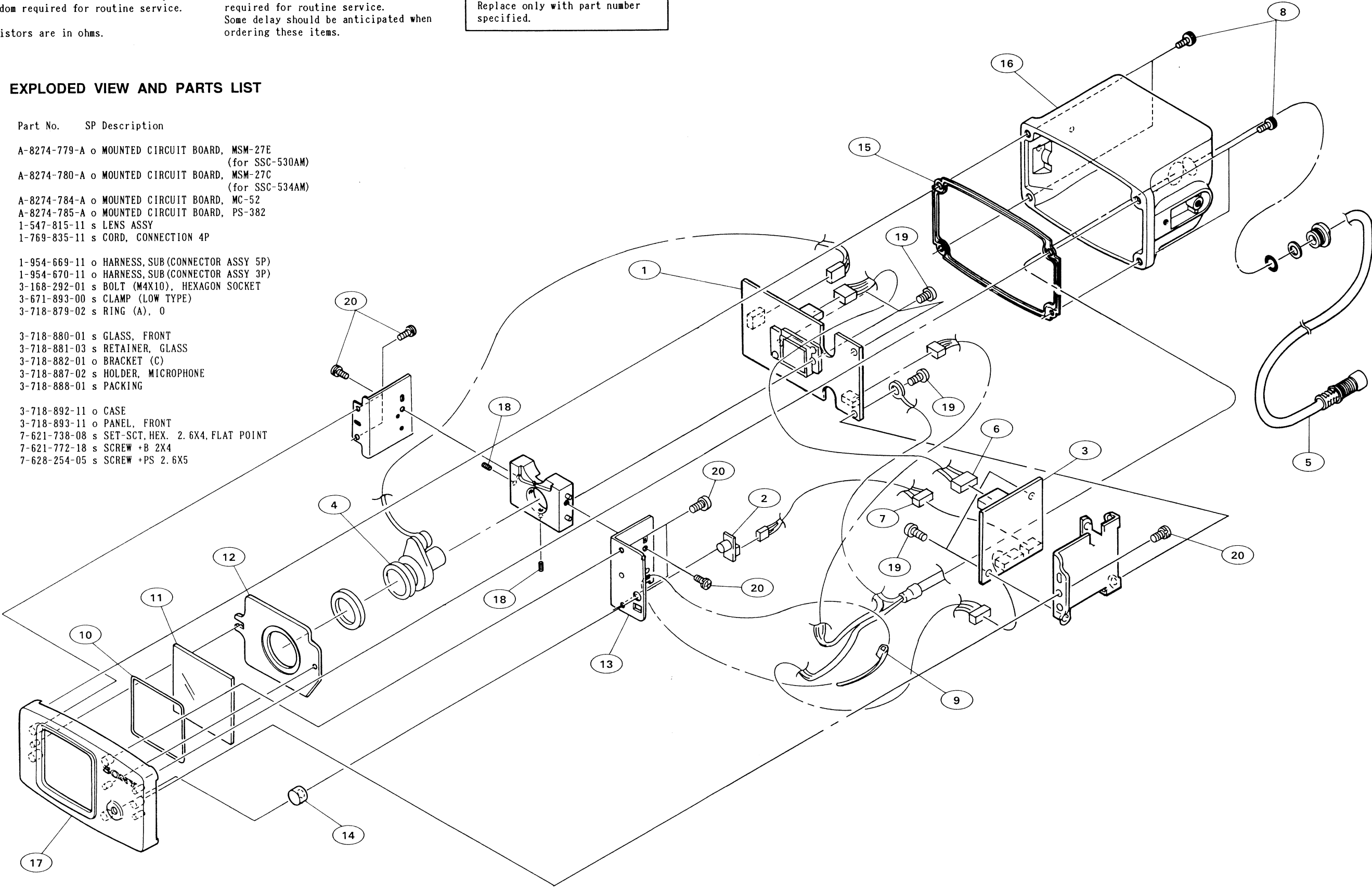
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- All resistors are in ohms.

- Items marked "o" in the SP column are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by mark  are critical for safety. Replace only with part number specified.

6-1. EXPLODED VIEW AND PARTS LIST

No.	Part No.	SP Description
1	A-8274-779-A o	MOUNTED CIRCUIT BOARD, MSM-27E (for SSC-530AM)
	A-8274-780-A o	MOUNTED CIRCUIT BOARD, MSM-27C (for SSC-534AM)
2	A-8274-784-A o	MOUNTED CIRCUIT BOARD, MC-52
3	A-8274-785-A o	MOUNTED CIRCUIT BOARD, PS-382
4	1-547-815-11 s	LENS ASSY
5	1-769-835-11 s	CORD, CONNECTION 4P
6	1-954-669-11 o	HARNESS, SUB (CONNECTOR ASSY 5P)
7	1-954-670-11 o	HARNESS, SUB (CONNECTOR ASSY 3P)
8	3-168-292-01 s	BOLT (M4X10), HEXAGON SOCKET
9	3-671-893-00 s	CLAMP (LOW TYPE)
10	3-718-879-02 s	RING (A), O
11	3-718-880-01 s	GLASS, FRONT
12	3-718-881-03 s	RETAINER, GLASS
13	3-718-882-01 o	BRACKET (C)
14	3-718-887-02 s	HOLDER, MICROPHONE
15	3-718-888-01 s	PACKING
16	3-718-892-11 o	CASE
17	3-718-893-11 o	PANEL, FRONT
18	7-621-738-08 s	SET-SCT, HEX. 2.6X4, FLAT POINT
19	7-621-772-18 s	SCREW +B 2X4
20	7-628-254-05 s	SCREW +PS 2.6X5



6-2. ELECTRICAL PARTS LIST

MSM-27E/27C BOARD

Ref. No. or Q'ty	Part No.	SP Description
1pc	A-8274-779-A	o MOUNTED CIRCUIT BOARD, MSM-27E (included IC101) (for SSC-530AM)
1pc	A-8274-780-A	o MOUNTED CIRCUIT BOARD, MSM-27C (included IC101) (for SSC-534AM)
1pc	3-718-885-02	s SPACER
1pc	7-621-772-18	s SCREW +B 2X4
C101	1-164-315-11	s CERAMIC 470PF 5% 50V
C102	1-107-687-11	s TANTAL 3.3uF 20% 20V
C103	1-135-145-11	s TANTALUM, CHIP 0.47uF 10% 35V
C104	1-107-687-11	s TANTAL 3.3uF 20% 20V
C105	1-162-974-11	s CERAMIC 0.01uF 50V
C106	1-135-333-11	s TANTAL 1uF 20% 16V
C107	1-104-752-11	s TANTAL 33uF 20% 6.3V
C108	1-164-005-11	s CERAMIC, CHIP 0.47uF 25V
C109	1-162-995-11	s CERAMIC, CHIP 0.022uF 50V
C110	1-162-995-11	s CERAMIC, CHIP 0.022uF 50V
C201	1-164-156-11	s CERAMIC 0.1uF 25V
C202	1-165-319-11	s CERAMIC, CHIP 0.1uF 50V
C203	1-164-156-11	s CERAMIC 0.1uF 25V
C204	1-107-686-11	s TANTAL 4.7uF 20% 16V
C205	1-107-689-21	s TANTAL 1uF 10% 35V
C206	1-164-156-11	s CERAMIC 0.1uF 25V
C207	1-104-917-11	s TANTAL 15uF 20% 20V
C208	1-164-005-11	s CERAMIC, CHIP 0.47uF 25V
C209	1-162-970-11	s CERAMIC, CHIP 0.01uF 10% 25V
C211	1-135-259-11	s TANTAL 10uF 20% 6.3V
C213	1-135-181-21	s TANTALUM, CHIP 4.7uF 10% 6.3V
C214	1-162-970-11	s CERAMIC, CHIP 0.01uF 10% 25V
C215	1-162-964-11	s CERAMIC 0.001uF 10% 50V
C301	1-162-916-11	s CERAMIC, CHIP 12PF 5% 50V
C302	1-162-916-11	s CERAMIC, CHIP 12PF 5% 50V
C303	1-162-964-11	s CERAMIC 0.001uF 10% 50V
C304	1-135-259-11	s TANTAL 10uF 20% 6.3V
C305	1-162-970-11	s CERAMIC, CHIP 0.01uF 10% 25V
C307	1-162-970-11	s CERAMIC, CHIP 0.01uF 10% 25V
C308	1-135-259-11	s TANTAL 10uF 20% 6.3V
C309	1-162-912-11	s CERAMIC 7PF 0.5PF 50V
C310	1-162-912-11	s CERAMIC 7PF 0.5PF 50V
C311	1-135-259-11	s TANTAL 10uF 20% 6.3V
C312	1-162-970-11	s CERAMIC, CHIP 0.01uF 10% 25V
C313	1-162-923-11	s CERAMIC, CHIP 47PF 5% 50V
C314	1-162-923-11	s CERAMIC, CHIP 47PF 5% 50V
C315	1-162-923-11	s CERAMIC, CHIP 47PF 5% 50V
C316	1-162-923-11	s CERAMIC, CHIP 47PF 5% 50V
C401	1-126-392-11	s ELECT, CHIP 100uF 20% 6.3V
C402	1-135-259-11	s TANTAL 10uF 20% 6.3V
C403	1-164-156-11	s CERAMIC 0.1uF 25V
C404	1-135-333-11	s TANTAL 1uF 20% 16V
C405	1-162-922-11	s CERAMIC, CHIP 39PF 5% 50V
C406	1-162-919-11	s CERAMIC, CHIP 22PF 5% 50V
C407	1-104-847-11	s TANTAL 22uF 20% 4V
C408	1-162-970-11	s CERAMIC, CHIP 0.01uF 10% 25V
C409	1-104-852-11	s TANTAL 22uF 20% 10V
C410	1-162-970-11	s CERAMIC, CHIP 0.01uF 10% 25V
C411	1-135-181-21	s TANTALUM, CHIP 4.7uF 10% 6.3V
C412	1-135-181-21	s TANTALUM, CHIP 4.7uF 10% 6.3V
C413	1-107-686-11	s TANTAL 4.7uF 20% 16V
C414	1-107-686-11	s TANTAL 4.7uF 20% 16V

(MSM-27E/27C BOARD)

Ref. No. or Q'ty	Part No.	SP Description
C415	1-135-259-11	s TANTAL 10uF 20% 6.3V
C416	1-162-970-11	s CERAMIC, CHIP 0.01uF 10% 25V
C417	1-162-970-11	s CERAMIC, CHIP 0.01uF 10% 25V
C418	1-135-227-11	s TANTAL 100uF 10% 6.3V
C501	1-164-156-11	s CERAMIC 0.1uF 25V
C502	1-162-970-11	s CERAMIC, CHIP 0.01uF 10% 25V
C503	1-164-005-11	s CERAMIC, CHIP 0.47uF 25V
C504	1-104-852-11	s TANTAL 22uF 20% 10V
C505	1-135-333-11	s TANTAL 1uF 20% 16V
C506	1-135-181-21	s TANTALUM, CHIP 4.7uF 10% 6.3V
C507	1-135-259-11	s TANTAL 10uF 20% 6.3V
CN101	1-573-768-21	s PIN, CONNECTOR (1.5MM) (SMD) 5P
CN102	1-573-290-21	s CONNECTOR (SMD) 4P, MALE
CN103	1-691-550-11	s CONNECTOR (SMD) 3P, MALE
D201	8-719-404-46	s DIODE MA110
D202	8-719-404-46	s DIODE MA110
D203	8-719-404-35	s DIODE MA141WK
D204	8-719-404-46	s DIODE MA110
D401	8-719-800-76	s DIODE 1SS226
FL101	1-239-035-11	s FILTER, EMI (CHIP)
FL102	1-239-035-11	s FILTER, EMI (CHIP)
IC201	8-752-355-06	s IC CXD1267N
IC301	8-752-360-91	s IC CXD2400R
IC401	8-752-051-25	s IC CXA1310AQ
IC501	8-759-100-94	s IC UPC358G2
L201	1-412-030-11	s INDUCTOR CHIP 22uH
L301	1-412-030-11	s INDUCTOR CHIP 22uH
L401	1-410-201-51	s INDUCTOR CHIP 5.6uH
L402	1-410-196-11	s INDUCTOR CHIP 2.2uH
L403	1-412-030-11	s INDUCTOR CHIP 22uH
L404	1-412-030-11	s INDUCTOR CHIP 22uH
L501	1-412-030-11	s INDUCTOR CHIP 22uH
Q101	8-729-012-35	s TRANSISTOR 2SK711-BL
Q201	8-729-230-60	s TRANSISTOR 2SA1586-YG
R101	1-216-817-11	s METAL, CHIP 470 5% 1/16W
R102	1-216-828-11	s METAL, CHIP 3.9K 5% 1/16W
R103	1-216-809-11	s METAL, CHIP 100 5% 1/16W
R104	1-216-838-11	s METAL, CHIP 27K 5% 1/16W
R105	1-216-848-11	s METAL, CHIP 180K 5% 1/16W
R106	1-216-819-11	s METAL, CHIP 680 5% 1/16W
R107	1-216-837-11	s METAL, CHIP 22K 5% 1/16W
R201	1-216-857-11	s METAL, CHIP 1M 5% 1/16W
R202	1-216-845-11	s METAL, CHIP 100K 5% 1/16W
R203	1-216-839-11	s METAL, CHIP 33K 5% 1/16W
R204	1-216-837-11	s METAL, CHIP 22K 5% 1/16W
R205	1-216-841-11	s METAL, CHIP 47K 5% 1/16W
R206	1-216-845-11	s METAL, CHIP 100K 5% 1/16W
R301	1-216-864-11	s METAL, CHIP 0-OHM (for SSC-534AM)
R302	1-216-825-11	s METAL, CHIP 2.2K 5% 1/16W
R303	1-216-825-11	s METAL, CHIP 2.2K 5% 1/16W
R304	1-216-825-11	s METAL, CHIP 2.2K 5% 1/16W
R305	1-216-825-11	s METAL, CHIP 2.2K 5% 1/16W
R306	1-216-809-11	s METAL, CHIP 100 5% 1/16W
R307	1-216-809-11	s METAL, CHIP 100 5% 1/16W
R308	1-216-841-11	s METAL, CHIP 47K 5% 1/16W
R401	1-218-285-11	s METAL, CHIP 75 5% 1/16W

(MSM-27E/27C BOARD)

Ref. No. or Q'ty	Part No.	SP Description
R402	1-216-845-11 s	METAL, CHIP 100K 5% 1/16W
R403	1-216-818-11 s	METAL, CHIP 560 5% 1/16W
R404	1-216-833-11 s	METAL, CHIP 10K 5% 1/16W
R405	1-216-829-11 s	METAL, CHIP 4.7K 5% 1/16W
R407	1-216-857-11 s	METAL, CHIP 1M 5% 1/16W
R408	1-216-833-11 s	METAL, CHIP 10K 5% 1/16W
R409	1-216-826-11 s	METAL, CHIP 2.7K 5% 1/16W
R410	1-216-824-11 s	METAL, CHIP 1.8K 5% 1/16W
R411	1-218-881-11 s	METAL, CHIP 27K 0.50% 1/16W
R412	1-218-725-11 s	METAL 24K 0.50% 1/16W
R417	1-218-883-11 s	METAL, CHIP 33K 0.50% 1/16W
R418	1-218-725-11 s	METAL 24K 0.50% 1/16W
R501	1-216-843-11 s	METAL, CHIP 68K 5% 1/16W
R502	1-216-799-11 s	METAL, CHIP 15 5% 1/16W
R503	1-216-841-11 s	METAL, CHIP 47K 5% 1/16W
R504	1-216-831-11 s	METAL, CHIP 6.8K 5% 1/16W
R505	1-216-813-11 s	METAL, CHIP 220 5% 1/16W
R506	1-216-841-11 s	METAL, CHIP 47K 5% 1/16W
R507	1-216-821-11 s	METAL, CHIP 1K 5% 1/16W
R508	1-216-843-11 s	METAL, CHIP 68K 5% 1/16W
R510	1-216-833-11 s	METAL, CHIP 10K 5% 1/16W
R511	1-216-842-11 s	METAL, CHIP 56K 5% 1/16W
R512	1-216-825-11 s	METAL, CHIP 2.2K 5% 1/16W
R513	1-216-837-11 s	METAL, CHIP 22K 5% 1/16W
RV201	1-238-092-11 s	RES, ADJ, METAL 47K
RV401	1-238-087-11 s	RES, ADJ, METAL 1K
RV402	1-238-092-11 s	RES, ADJ, METAL 47K
X301	1-760-026-11 s	CRYSTAL 19.06992MHz (for SSC-530AM)
	1-760-025-11 s	CRYSTAL 18.9375MHz (for SSC-534AM)

MC-52 BOARD

Ref. No. or Q'ty	Part No.	SP Description
1pc	A-8274-784-A o	MOUNTED CIRCUIT BOARD, MC-52
CN701	1-691-550-11 s	CONNECTOR (SMD) 3P, MALE
MIC701	8-814-189-31 s	MICROPHONE, BUILT-IN (C-1007D)

PS-382 BOARD

Ref. No. or Q'ty	Part No.	SP Description
1pc	A-8274-785-A o	MOUNTED CIRCUIT BOARD, PS-382
C601	1-104-914-11 s	TANTALUM, CHIP 22uF 20% 16V
C603	1-164-227-11 s	CERAMIC 0.022uF 10% 25V
C604	1-216-864-11 s	METAL, CHIP 0-OHM
C605	1-135-181-21 s	TANTALUM, CHIP 4.7uF 10% 6.3V
C606	1-162-970-11 s	CERAMIC, CHIP 0.01uF 10% 25V
C607	1-164-816-11 s	CERAMIC 220PF 2% 50V
C608	1-162-968-11 s	CERAMIC, CHIP 0.0047uF 10% 50V
C609	1-135-180-21 s	TANTALUM, CHIP 3.3uF 20% 6.3V
C610	1-164-346-11 s	CERAMIC 1uF 16V
C611	1-164-836-11 s	CERAMIC 6.8uF 16V
C612	1-107-834-91 s	ELECT 8.2uF 20% 8V
C615	1-164-506-11 s	CERAMIC, CHIP 4.7uF 16V
C616	1-135-181-21 s	TANTALUM, CHIP 4.7uF 10% 6.3V
C617	1-164-346-11 s	CERAMIC 1uF 16V
C618	1-164-505-11 s	CERAMIC, CHIP 2.2uF 16V
C619	1-104-915-11 s	TANTAL 2.2uF 20% 20V
C630	1-104-852-11 s	TANTAL 22uF 20% 10V
CN601	1-695-320-21 o	CONNECTOR (SMD) 2P, MALE
CN602	1-573-768-21 s	PIN, CONNECTOR (1.5MM) (SMD) 5P
CN603	1-691-550-11 s	CONNECTOR (SMD) 3P, MALE
D601	8-719-975-40 s	DIODE RB411D
D603	8-719-027-77 s	DIODE MA796
F601	▲1-533-271-21 s	FUSE, CHIP 0.5A 125V
FL601	1-239-077-11 s	FILTER, EMI
IC601	8-759-261-48 s	IC TL1451ACPW-E20
L601	1-424-653-11 s	COIL, CHOKE 10uH
L602	1-402-831-21 s	COIL, CHOKE 68uH
L603	1-414-265-21 s	INDUCTOR 4.7uH
L604	1-414-275-11 s	INDUCTOR 220uH
L605	1-414-275-11 s	INDUCTOR 220uH
Q602	8-729-823-84 s	TRANSISTOR FP102
Q603	8-729-804-41 s	TRANSISTOR 2SB1122-S
R602	1-218-699-11 s	METAL 2K 0.50% 1/16W
R603	1-218-708-11 s	METAL 4.7K 0.50% 1/16W
R604	1-216-837-11 s	METAL, CHIP 22K 5% 1/16W
R605	1-216-840-11 s	METAL, CHIP 39K 5% 1/16W
R606	1-218-724-11 s	METAL 22K 0.50% 1/16W
R607	1-216-829-11 s	METAL, CHIP 4.7K 5% 1/16W
R608	1-218-708-11 s	METAL 4.7K 0.50% 1/16W
R609	1-216-845-11 s	METAL, CHIP 100K 5% 1/16W
R610	1-216-813-11 s	METAL, CHIP 220 5% 1/16W
R611	1-218-708-11 s	METAL 4.7K 0.50% 1/16W
R612	1-218-708-11 s	METAL 4.7K 0.50% 1/16W
R613	1-218-716-11 s	METAL 10K 0.50% 1/16W
R614	1-218-704-11 s	METAL 3.3K 0.50% 1/16W
R615	1-216-845-11 s	METAL, CHIP 100K 5% 1/16W
R616	1-216-829-11 s	METAL, CHIP 4.7K 5% 1/16W
R617	1-218-708-11 s	METAL 4.7K 0.50% 1/16W
R618	1-216-839-11 s	METAL, CHIP 33K 5% 1/16W
R619	1-216-821-11 s	METAL, CHIP 1K 5% 1/16W
R620	1-216-801-11 s	METAL, CHIP 22 0.50% 1/16W
R621	1-216-817-11 s	METAL, CHIP 470 5% 1/16W
R622	1-216-821-11 s	METAL, CHIP 1K 5% 1/16W

SSC-530AM/534AM

(PS-382 BOARD)

Ref. No. or Q'ty	Part No.	SP Description
R623	1-216-817-11 s	METAL, CHIP 470 5% 1/16W
R630	1-216-826-11 s	METAL, CHIP 2.7K 5% 1/16W
T601	1-450-976-11 s	TRANSFORMER, CONVERTER

FRAME

Ref. No. or Q'ty	Part No.	SP Description
1pc	1-547-815-11 s	LENS ASSY
1pc	1-769-835-11 s	CORD, CONNECTION 4P
HN1	1-954-669-11 o	HARNESS, SUB (CONNECTOR ASSY 5P)
HN2	1-954-670-11 o	HARNESS, SUB (CONNECTOR ASSY 3P)

PACKING MATERIALS & SUPPLIED ACCESSORIES

Ref. No. or Q'ty	Part No.	SP Description
1pc	3-168-154-01 o	CUSHION (UPPER)
1pc	3-168-155-01 o	CUSHION (LOWER)
4pcs	3-168-292-01 s	BOLT (M4X10), HEXAGON SOCKET
1pc	3-188-173-01 o	INDIVIDUAL CARTON (for SSC-530AM)
1pc	3-188-175-01 o	INDIVIDUAL CARTON (for SSC-534AM)
4pcs	3-718-878-01 s	WASHER (4), FLAT
5pcs	3-718-898-01 o	NUT, RUBBER
1pc	3-798-878-11 s	MANUAL, INSTRUCTION (for SSC-530AM)
1pc	3-798-879-11 s	MANUAL, INSTRUCTION (for SSC-534AM)
1pc	3-798-879-21 s	MANUAL, INSTRUCTION (for SSC-534AM)
1pc	3-798-879-31 s	MANUAL, INSTRUCTION (for SSC-534AM)
2pcs	4-035-156-01 s	TAPE
1pc	4-386-559-01 s	CAP, RUBBER
1pc	7-721-140-60 s	WRENCH, HEX L (3.0)